

**AMENDMENTS TO THE CLAIMS:**

1. (Canceled) A two-cycle fuel additive for reducing a pollutant emission, the additive comprising: a plant oil extract; an antioxidant; and a thermal stabilizer.
2. (Canceled) The two-cycle fuel additive of claim 1, wherein the plant oil extract comprises an oil extract of a plant of the Leguminosae family.
3. (Canceled) The two-cycle fuel additive of claim 1, wherein the plant oil extract is selected from the group consisting of oil extract of vetch and oil extract of barley.
4. (Canceled) The two-cycle fuel additive of claim 1, wherein the plant oil extract comprises chlorophyll.
5. (Canceled) The two-cycle fuel additive of claim 1, wherein the antioxidant comprises  $\beta$ -carotene.
6. (Canceled) The two-cycle fuel additive of claim 1, wherein the thermal stabilizer comprises jojoba oil.
7. (Canceled) The two-cycle fuel additive of claim 1, wherein the thermal stabilizer comprises an ester of a C20-C22 straight chain monounsaturated carboxylic acid.
8. (Canceled) The two-cycle fuel additive of claim 1, wherein the plant oil extract comprises oil extract of vetch, wherein the antioxidant comprises  $\beta$ -carotene, and wherein the thermal stabilizer comprises jojoba oil.
9. (Canceled) The two-cycle fuel additive of claim 1, further comprising a diluent.

10. (Canceled) The two-cycle fuel additive of claim 9, wherein the diluent is selected from the group consisting of toluene, two-cycle fuel additive, two-cycle fuel, jet fuel, and mixtures thereof.
11. (Canceled) The two-cycle fuel additive of claim 1, further comprising an oxygenate.
12. (Canceled) The two-cycle fuel additive of claim 11, wherein the oxygenate is selected from the group consisting of methanol, ethanol, methyl tertiary butyl ether, ethyl tertiary butyl ether, and tertiary amyl methyl ether, and mixtures thereof.
13. (Canceled) The two-cycle fuel additive of claim 1, further comprising at least one additional additive selected from the group consisting of cetane improvers, detergents, corrosion inhibitors, metal deactivators, ignition accelerators, dispersants, anti-knock additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, antiwear additives, antioxidants, demulsifiers, carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, and mixtures thereof.
14. (Canceled) The two-cycle fuel additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is from about 12:1 to about 0.05:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is from about 5:1 to about 0.5:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is from about 5:1 to about 0.5:1.
15. (Canceled) The two-cycle fuel additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is from about 6:1 to about 0.1:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is from about 2.7:1 to about 0.1:1, and wherein a ratio of milliliters

jojoba oil to grams of  $\beta$ -carotene in the additive is from about 2.2:1 to about 1:1.

16. (Canceled) The coal additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is about 5:3, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is about 2.5:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is about 2:3.
17. (Canceled) The two-cycle fuel additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is about 2.1:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is about 1.5:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is about 1.4:1.
18. (Canceled) The two-cycle fuel additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is about 6.0:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is about 2.7:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is about 2.2:1.
19. (Canceled) The two-cycle fuel additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is about 1:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is about 0.8:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is about 1.2:1.
20. (Canceled) The two-cycle fuel additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is about 0.5:1, wherein a ratio of grams of oil extract of

vetch to milliliters jojoba oil in the additive is about 0.5:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is about 1.1:1.

21. (Canceled) The two-cycle fuel additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is about 0.3:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is about 0.3:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is about 1.1:1.
22. (Canceled) The coal of claim 18, wherein the antioxidant comprises  $\beta$ -carotene.
23. (Canceled) The two-cycle fuel additive of claim 8, wherein the additive comprises a first component and a second component, wherein the first component comprises jojoba oil and  $\beta$ -carotene, and wherein the second component comprises jojoba oil and oil extract of vetch.
24. (Canceled) The two-cycle fuel additive of claim 8, wherein the additive comprises a first component and a second component, wherein the first component comprises about 4 ml jojoba oil per 3785 ml of the first component and about 4 g  $\beta$ -carotene per 3785 ml of the first component, and wherein the second component comprises from about 4 ml jojoba oil per 3785 ml of the second component and about 19.36 g oil extract of vetch per 3785 ml of the second component.
25. (Previously presented) A two-cycle fuel additive comprising
  - a plant oil extract derived from grain;
  - a carotenoid; and

a thermal stabilizer.

26. (Previously presented) The additive of claim 25, wherein the grain is selected from the group consisting of fescue, clover, wheat, barley, oats, rye, sorghum, flax, triticale, rice, corn, spelt, millet, amaranth, buckwheat, quinoa, kamut and teff.
27. (Previously presented) The additive of claim 25 wherein the carotenoid is selected from the group consisting of  $\beta$ -carotene,  $\alpha$ -carotene, lycopene, leutin, betatene and mixtures thereof.
28. (Previously presented) The additive of claim 25, wherein the thermal stabilizer is selected from the group consisting of vegetable oils, nut oils, animal oils and mixtures thereof
29. (Previously presented) The additive of claim 25 wherein the plant oil extract is derived from barley and the carotenoid is  $\beta$ -carotene.
30. (Previously presented) The additive of claim 25 wherein the thermal stabilizer is meadowfoam oil.
31. (Pending) The additive of claim 25 further comprising a diluent.
32. (Amended) The additive of claim 25 further comprising a solvent selected from the group consisting of toluene, benzene, o-xylene, m-xylene, p-xylene, cyclohexanes, hexane, octanes, nonanes, two-cycle fuel, jet fuel, two-cycle fuel, 2 cycle oil, two-cycle fuel and mixtures thereof.
33. (Pending) The additive of claim 25 further comprising at least one additive selected from the group selected from octane improvers, cetane improvers, detergents, corrosion inhibitors, metal deactivators, ignition accelerators, dispersants, anti-knock additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, anti-wear additives, antioxidants, demulsifiers,

carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, oxygenates and mixtures thereof.

34. (Amended) A two-cycle fuel additive comprising:

a hydrophobic plant oil extract;

a carotenoid; and

a thermal stabilizer selected from the group consisting of peanut oil, cottonseed oil, rape seed oil, macadamia oil, avocado oil, palm oil, palm kernel oil, meadowfoam oil and mixtures thereof.

35. (Previously presented) The additive of claim 34 wherein the plant oil extract is derived from a member of the Leguminosae family.

36. (Previously presented) The additive of claim 34 wherein the plant oil extract is derived from grain.

37. (Pending) The additive of claim 34 further comprising a diluent.

38. (Amended) The additive of claim 34 further comprising a solvent selected from the group consisting of toluene, benzene, o-xylene, m-xylene, p-xylene, cyclohexanes, hexane, octanes, nonanes, two-cycle fuel, jet fuel, two-cycle fuel, 2 cycle oil, two-cycle fuel and mixtures thereof.

39. (Previously presented) The additive of claim 34 further comprising at least one additive selected from the group selected from octane improvers, cetane improvers, detergents, corrosion inhibitors, metal deactivators, ignition accelerators, dispersants, anti-knock additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, anti-wear additives, antioxidants, demulsifiers, carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, oxygenates and mixtures thereof.

40. (Previously presented) The additive of claim 34, wherein the carotenoid is selected from the group consisting of  $\beta$ -carotene,  $\alpha$ -carotene, lycopene, leutin, betatene and mixtures thereof.
41. (Previously presented) The additive of claim 34 wherein the plant oil extract is barley oil extract, and the carotenoid is  $\beta$ -carotene.
42. (Previously presented) The additive of claim 34 further comprising meadowfoam oil.
43. (Previously presented) A two-cycle fuel additive comprising;  
  
a plant oil extract selected from the group consisting of hops oil extract, fescue oil extract, barley oil extract, green clover oil extract, wheat oil extract and mixtures thereof;  
  
a carotenoid; and  
  
a thermal stabilizer.
44. (Previously presented) The additive of claim 43 wherein the carotenoid is selected from the group consisting of  $\beta$ -carotene,  $\alpha$ -carotene, lycopene, leutin, betatene and mixtures thereof.
45. (Previously presented) The additive of claim 43, wherein the thermal stabilizer is selected from the group consisting of vegetable oils, nut oils, animal oils and mixtures thereof
46. (Previously presented) The additive of claim 43 wherein the plant oil extract is derived from barley and the carotenoid is  $\beta$ -carotene.
47. (Previously presented) The additive of claim 43 wherein the thermal stabilizer is meadowfoam oil.
48. (Previously presented) The additive of claim 43 further comprising a diluent.

49. (Previously presented) The additive of claim 48 wherein the diluent is selected from the group consisting of toluene, benzene, o-xylene, m-xylene, p-xylene, cyclohexanes, hexane, octanes, nonanes, two-cycle fuel, jet fuel, two-cycle fuel, 2 cycle oil, two-cycle fuel and mixtures thereof.
50. (Previously presented) The additive of claim 43 further comprising at least one additive selected from the group selected from octane improvers, cetane improvers, detergents, corrosion inhibitors, metal deactivators, ignition accelerators, dispersants, anti-knock additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, anti-wear additives, antioxidants, demulsifiers, carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, oxygenates and mixtures thereof.
51. (Canceled) The additive of claim 43 wherein the plant oil extract is barley oil extract, and the carotenoid is  $\beta$ -carotene.
52. (Amended) A two-cycle fuel comprising a base fuel and at least one additive wherein the additive comprises:
- a plant oil extract derived from grain;
  - a carotenoid; and
  - a thermal stabilizer.
53. (Previously presented) The two-cycle fuel of claim 52, wherein the grain is selected from the group consisting of fescue, clover, wheat, barley, oats, rye, sorghum, flax, triticale, rice, corn, spelt, millet, amaranth, buckwheat, quinoa, kamut and teff.



54. (Previously presented) The two-cycle fuel of claim 52 wherein the carotenoid is selected from the group consisting of  $\beta$ -carotene,  $\alpha$ -carotene, lycopene, leutin, betatene and mixtures thereof.
55. (Previously presented) The two-cycle fuel of claim 52, wherein the thermal stabilizer is selected from the group consisting of vegetable oils, nut oils, animal oils and mixtures thereof.
56. (Previously presented) The two-cycle fuel of claim 52 wherein the plant oil extract is derived from barley and the carotenoid is  $\beta$ -carotene.
57. (Previously presented) The two-cycle fuel of claim 52 wherein the thermal stabilizer is meadowfoam oil.
58. (Pending) The two-cycle fuel of claim 52 further comprising a diluent.
59. (Amended) The two-cycle fuel of claim 52 further comprising a solvent selected from the group consisting of toluene, benzene, o-xylene, m-xylene, p-xylene, cyclohexanes, hexane, octanes, nonanes, two-cycle fuel, jet fuel, two-cycle fuel, 2 cycle oil and two-cycle fuel and mixtures thereof.
60. (Previously presented) The two-cycle fuel of claim 52 further comprising at least one additive selected from the group selected from octane improvers, cetane improvers, detergents, corrosion inhibitors, metal deactivators, ignition accelerators, dispersants, anti-knock additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, anti-wear additives, antioxidants, demulsifiers, carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, oxygenates and mixtures thereof.

61. (Canceled) The two-cycle fuel of claim 52 wherein the plant oil extract is barley oil extract, the carotenoid is  $\beta$ -carotene.
62. (Amended) A two-cycle fuel comprising a base fuel and at least one additive wherein the additive comprises:
- a hydrophobic plant oil extract;
  - a carotenoid; and
  - a thermal stabilizer selected from the group consisting of peanut oil, cottonseed oil, rape seed oil, macadamia oil, avocado oil, palm oil, palm kernel oil, meadowfoam oil and mixtures thereof.
63. (Previously presented) The two-cycle fuel of claim 62 wherein the plant oil extract is derived from a member of the Leguminosae family.
64. (Previously presented) The two-cycle fuel of claim 62 wherein the plant oil extract is derived from grain.
65. (Pending) The two-cycle fuel of claim 62 further comprising a diluent.
66. (Amended) The two-cycle fuel of claim 62 further comprising a solvent selected from the group consisting of toluene, benzene, o-xylene, m-xylene, p-xylene, cyclohexanes, hexane, octanes, nonanes, two-cycle fuel, jet fuel, two-cycle fuel, 2 cycle oil and two-cycle fuel and mixtures thereof.
67. (Previously presented) The two-cycle fuel of claim 62 further comprising at least one additive selected from the group selected from octane improvers, cetane improvers, detergents, corrosion inhibitors, metal deactivators, ignition accelerators, dispersants, anti-knock additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, anti-wear additives, antioxidants,

demulsifiers, carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, oxygenates and mixtures thereof.

68. (Previously presented) The two-cycle fuel of claim 62, wherein the carotenoid is selected from the group consisting of  $\beta$ -carotene,  $\alpha$ -carotene, lycopene, leutin, betatene and mixtures thereof.
69. (Previously presented) The two-cycle fuel of claim 62 wherein the plant oil extract is barley oil extract, the carotenoid is  $\beta$ -carotene.
70. (Previously presented) A two-cycle fuel comprising a base feed and at least one additive wherein the additive comprises:
- a plant oil extract selected from the group consisting of hops oil extract, fescue oil extract, barley oil extract, green clover oil extract, wheat oil extract and mixtures thereof;
- a carotenoid; and
- a thermal stabilizer.
71. (Previously presented) The two-cycle fuel of claim 76 wherein the carotenoid is selected from the group consisting of  $\beta$ -carotene,  $\alpha$ -carotene, lycopene, leutin, betatene and mixtures thereof.
72. (Previously presented) The two-cycle fuel of claim 76, wherein the thermal stabilizer is selected from the group consisting of vegetable oils, nut oils, animal oils and mixtures thereof
73. (Previously presented) The two-cycle fuel of claim 70 wherein the plant oil extract is derived from barley and the carotenoid is  $\beta$ -carotene.
74. (Previously presented) The two-cycle fuel of claim 70 wherein the thermal stabilizer is meadowfoam oil.

75. (Pending) The two-cycle fuel of claim 70 further comprising a diluent.
76. (Amended) The two-cycle fuel of claim 70 further comprising a solvent selected from the group consisting of toluene, benzene, o-xylene, m-xylene, p-xylene, cyclohexanes, hexane, octanes, nonanes, two-cycle fuel, jet fuel, two-cycle fuel, 2 cycle oil and two-cycle fuel and mixtures thereof.
77. (Previously presented) The two-cycle fuel of claim 70 further comprising at least one additive selected from the group selected from octane improvers, cetane improvers, detergents, corrosion inhibitors, metal deactivators, ignition accelerators, dispersants, anti-knock additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, anti-wear additives, antioxidants, demulsifiers, carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, oxygenates and mixtures thereof.
78. (Canceled) The two-cycle fuel of claim 70 wherein the plant oil extract is barley oil extract, the carotenoid is  $\beta$ -carotene.